

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

Claim 1 (Currently Amended): A plasma sterilization apparatus, comprising a sterilization chamber for receiving therein a sterilization object, a high frequency power source connected to a cathode, for generating optimal plasma under control of both an impedance matching controller and an impedance matching circuit, the cathode being installed, along with an anode at a predetermined distance, in the sterilization chamber, an injection heater for vaporizing and injecting a hydrogen peroxide solution in mixture with air into the sterilization chamber, and a vacuum pump, connected through an exhaust pipe to the sterilization chamber, for extracting air from the sterilization chamber to form a vacuum state in the sterilization chamber, wherein the exhaust pipe is equipped with a dehumidifier for freeze-condensing the water vapor in the gas flowing through the exhaust pipe to prevent the entry of the water vapor into the vacuum pump.

Claim 2 (Original): The plasma sterilization apparatus as set forth in claim 1, wherein said dehumidifier forms a freezing cycle which comprises a compressor, a condenser, an expansion valve and a freezer, the freezer being housed in a housing connected to the exhaust pipe.